made of a claim for foreign priority; and certified copies of the priority documents have been received in this National Stage application from the International Bureau.

**REJECTION UNDER 35 U.S.C. § 102**

Claims 17-32 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hornbeck (U.S. Pat. No. 5,021,663).

The Office Action at Page 2 states:

> Hornbeck (663)clearly [sic] discloses in FIG. 3 a single bolometer, generally denoted by reference numeral 140, from array 106. ... The outputs of buffer amplifiers 120 are read in column read out circuit 128 with a row at a time selected by row addressing circuit 130, which turns on pass transistors 132 in one row at a time (implies at least two detectors linked together, as recited in Claims 17 and 21). (emphasis added)

Note that the rejection mentions an implication, refers to independent Claim 17 and dependent Claim 20, and does not mention independent Claim 22.

Beyond this, the Office Action at Pages 3-9 contains verbatim extraction of text from the applied reference (Hornbeck), without any discussion as to how such extracted recitation of text is applied, in any way, or may be relevant to, in any way, the claims in the present application. For example:

i. From the top of Page 3 through the middle of Page 4, the Office Action recites word-for-word text from Columns 3 and 7 of Hornbeck, without any discussion as to how such applies to the rejection of the present claims.

ii. From the middle of Page 4 to the top of Page 5, the Office Action recites word-for-word text from Hornbeck Column 8, without any discussion as to its relevance to the present rejection.

iii. From the top of Page 5 to the top of Page 6, the Office Action recites word-for-word text from Columns 10 and 11 of Hornbeck, without any discussion as to how such applies to the claims herein.

iv. From the upper portion of Page 6 to and through the top of Page 9, the Office Action recites word-for-word text from Hornbeck Column 8, all of Column 9 and much of Column 10, without any discussion as to how such applies to the present invention.

Therefore, it is respectfully submitted that the present rejection fails to make a *prima facie* case for rejection of the present claims, 17-32.

This present response assumes, for argument's sake, that the basis of rejection is as recited in Page 2 of the Office Action; namely, that Hornbeck somehow "implies at least two detectors linked together, as recited in Claims 17 and 21."

It is respectfully submitted that this basis is unfounded, and is an inaccurate interpretation of Hornbeck. There is also an apparent lack of appreciation of the recited elements of independent Claim 17 and the method of forming the device of the present invention as recited in independent Claim 22.

The Office Action appears to confuse the following elements: the signal processing circuit (13) in the pending application; the silicon substrate (142) of Hornbeck; and the suspended layers constituting the active zones sensitive to radiation (10) of each detector, referred to also as bolometer (14) in Hornbeck. This confusion is resolved by reference to the fundamental characteristics of the present invention as defined in device Claim 17 and method-of-making-same Claim 22. The important fundamental characteristics include the microbridge-suspended layers of two neighboring detectors linked together by additional mechanical connections (15, 15'). These connections (15, 15') are separate from the mechanical support devices (11). This important feature is clearly shown at least in Figures 8, 9 and 12 of the present pending application.

The aforesaid recited features are distinctly different from Hornbeck and are not found in Hornbeck.

A misinterpretation of Hornbeck in the Office Action leads to an implication and supposition that detectors are linked somehow together since "[t]he outputs of buffer amplifiers 120 are read in column read out circuit 128 with a row at a time selected by row addressing circuit 130...." In other words, the recitation in Hornbeck, which merely recites an electrical pathway of two or several detectors in the same row or column, is not relevant to the arrangement as recited in the present claims.

The difference between Hornbeck and the present invention leads to the improved function of the present invention: providing a heat-detecting device that detects electromagnetic radiation comprising microbridge heat detectors, which use very thin, flat, suspended, active layers with additional mechanical supports, linking neighboring detectors and including both linkage together by additional mechanical connections (15, 15') separate from mechanical support device (11).

The device of the present invention optimizes efficiency of incident wave absorption due to the unique geometrical configuration; provides very thin structures; implements microbridge in thin layers, reduces thermal inertia; and leads to fast detection on modulation of incident flux.

Turning further to the specification of the present invention, Figures 1 and 4-7 show classic detector structures. Figures 8 and 9 illustrate first and second embodiments of the present invention, where, for the first time, mechanical connection (15, 15') is used for additional support, enabling, also for the first time, the ultra-thin detector arrangement.

Nowhere is it suggested in Hornbeck that mechanical deformations induced by the intrinsic stress of layers that make up the microbridge are compensated by mechanical connection, such as (15, 15') illustrated in Figures 8, 9 and 12 of the present application. Therefore, the device made in accordance with the present invention does not require extensive thermal treatments for stress-relaxation, thus the signal-processing circuit is economically prepared and integrated into the detection circuit, providing the monolithic structure of the present invention, which has performance advantages over prior art structures, such as in Hornbeck.

**CONCLUSION**

It is respectfully submitted that the present response resolves the rejection of record.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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